

Superintendent's Annual Narrative Report

Arches National Park

Fiscal Year 2004

Management

Rockford Smith, Superintendent of Arches National Park via an Interagency Partnership Agreement with Utah State Parks, returned to the Utah State Park system in January 2004. He was replaced by Laura E. Joss who arrived in May of 2004.

Arches National Park had a very productive year in FY 2004. Construction of the new entrance station began in late September 2003, and was completed in April 2004. Harward and Rees Construction from Loa, Utah was the general contractor on this project. On July 1, 2004, a ribbon-cutting for this project was held jointly with a ground-breaking ceremony for the new visitor center. The visitor center construction is being done by Hogan, Inc., with construction management by PBS&J. COTR is Canyonlands National Park Facility Manager Wayne Nielsen. Completion of the 18,000 square foot structure is expected in early July 2005. The visitor center exhibit production contract was awarded to Southern Customs, and installation should be complete by mid-August 2005. Park staff continue to spend a great deal of time participating in both projects.



Entrance Station Ribbon-Cutting Ceremony



Visitor Center Groundbreaking

The Utah Department of Transportation conducted a project to widen US 191 from SR 279 to SR 313. This project included new turn lanes, acceleration/deceleration lanes at the new Arches entrance, and a bike path which parallels the park boundary from the Courthouse Wash parking lot to the Bar-M Ranch area. WW Clyde Construction from Salt Lake City was the general contractor on this project, and a ribbon-cutting was held in October 2004.

Arches continued to work with Otak, Inc. and the National Park Service's Denver Service Center on the park's Alternative Transportation Plan/Environmental Assessment in 2004. A project update newsletter was drafted in late summer 2004, and an Intelligent Transportation System study was initiated for production in the fall of 2004.

Proposals for mineral leasing on surrounding lands continued to be an issue for the park in 2004, and the park superintendent began communications with local Bureau of Land Management staff to discuss these. Proposed residential and commercial developments on lands adjacent to, or near, the park pose a threat to the park's viewshed and natural resources. The fate of the Atlas Uranium Mill tailings that are near the entrance to the park and along the Colorado River are a concern to the park. The tailings may either be moved or capped in place. Both of these options may affect the park.

Administration

Appropriations

The Arches National Park total ONPS Green Book funding for fiscal year 2004 was \$1,140,000 prior to IMR assessments. ONPS authorization after assessments was \$1,121,200.

Activities/Community Relations

Outgoing Superintendent Rock Smith and incoming Superintendent Laura Joss supervised the park's efforts in the visitor center, entrance station and other park planning endeavors. They attended agency and community meetings, local government planning, and community event planning. Smith was active on the Moab Mountain Bike Patrol as a patroller and instructor, and with community groups interested in trail issues. Joss joined the Moab Rotary Club, and attends meetings of the Moab Chamber of Commerce, Grand County Trail Mix group and Grand County Economic Development Committee. Eve Stocks volunteers with the Hospice organization at Allen Memorial Hospital and the local Christmas Box House.

Fiscal/Budget

<u>ONPS</u>	Administration	\$ 127,451
	Interpretation	\$ 329,419
	RMVP	\$ 320,935
	Maintenance	\$ 318,259
	Total	\$1, 096,064

<u>No Year</u>	\$ 41,064
<u>Housing Carryover</u>	\$ 22,146
<u>Housing Revenue 2003</u>	\$ 18,917
<u>Donations</u>	\$ 4,954
	\$ 25,616 Carryover into 2004
<u>Cost Recovery Revenue</u>	\$ 25,132

<u>Soft Funding:</u>	Prevent Flooding in Campground	\$41,490
	Delicate Arch Trail	\$55,329
	Rehab Water System	\$88,800
	Re-Stripe Park Roads	\$32,068
	Continue VERP Monitoring	\$51,571
	Trails – 4 Cs	\$85,033
	Eliminate Russian Knapweed	\$14,410
	Exhibit Replacement/Rehab	\$ 5,000
	IMR Microgrants	\$25,400

PUBLIC USE/VISITATION

Visitation in Fiscal Year 2004 was 747,755. This is a 2.85% decrease from the 769,672 visitors in CY2003. The total number of vehicles entering the park was 272,552. 6,494 hikers were issued permits for the Fiery Furnace. Campers in Devil's Garden Campground were 42,836. Canyon Country Outdoor Education conducted 5 field trips into Arches National Park, bringing 24 classes with 600 participants.

FEE REVENUES

Fee Revenues, under the Fee Demonstration Program, totaled \$1, 625,270 for FY2004. Other income collected was \$5537 for special use permits and \$4954 for donations with a total income of \$1, 635, 761.

Sources:	Campground Fees	\$147, 190
	Fiery Furnace	\$105, 054

Entrance Fees \$1,373, 026

Cost of Collection for FY04 was \$323, 829. Fees collected in FY2004 were up 2.62% above the amount collected in FY2003. This, in part, was due to an increase in fees for the Fiery Furnace guided walks.

Division of Fee Collection

Volunteers

Ten volunteers from the United States retirement community, spent 5,142 volunteer hours of service, providing assistance to campers at Devils Garden campground.

History and Planning

Fee Collection moved into the new entrance stations April 22, but did not open the second station until May 2, 2004 when additional staff was trained. We collected after hours entrance fees with the newly installed Automated Fee Machines starting April 23 and had collected over \$37,000 by the end of the fiscal year. The initial cost of the AFMs was \$42,000. Fees will be collected from the entrance station, instead of the visitor center, during the winter months due to the VC construction.

We are a season into the campground reservation system and think the reserved campsites that are now intermingled with first-come first-served sites cause great confusion for the customer and the park staff. The suggested change is to have the reserved sites encompass the lower loop, 25 – 54; and first-come first-served will encompass the first 24 sites. Plans are that the handicap site will be moved from 37H (lower loop) to #7. Power will not be readily available for the handicap site, but hopefully will be in the near future. A request has been approved to install an administrative campsite, location to be determined.

Activities/Community Relations

Natalie Hettman serves on the Fee Fraud Task Force for the Grand Circle cluster of parks and volunteered for the Humane Society of the Moab Valley for the whole year. Lee Kaiser participated in some SAR incidents. VUA Tisha Ward volunteered to serve the Grand County Fireman's Banquet this year and helped run the '24 Hours of Moab' bike run. Leo Dutilly helped with the St. Pius community food drive.

Division of Interpretation

Visitor Center

The Arches Visitor Center continues to be a busy place: 452,219 visitors entered the building, received information on the park and surrounding area including alternative camping locations, enjoyed an attractive and educational sales and exhibit area, watched a 16-minute orientation program, filed lost and found reports, received Fiery Furnace and backcountry permits, reported vehicle problems from keys locked inside to mechanical problems, reported lost and/or injured hikers and received emergency messages. Staff moved out of the old building in June 2004, and managed the busy part of the season in temporary facilities.

Fiery Furnace

Fees continued to be collected from March through October for the popular Fiery Furnace Walk, under the Fee Demonstration Project guidelines. For this ranger-led three-hour long tour of a trailless area, adult tickets cost \$8; children and seniors, \$4; children six years of age and under were free. Visitors entering the area without a ranger were issued a permit and charged \$2 for adults and \$1 for children and seniors. Tours continued to fill daily, from mid-March through October, with generally positive reaction to the fee increase. In addition to 14,217 people on 585 regularly scheduled and special tours, a total of 6,294 people procured permits during the year. A total of \$105,054 was collected for tours and permits.

Two GS-5 term Park Guides and two GS-4 part-time seasonal Visitor Use Assistants were hired with these funds to administer the collection of fees and provide interpretive services. Miriam Graham was hired into an Outdoor Education position in the fall, but continued working for Interpretation through October. Nancy Suokko was hired by the Fee Collection Division in mid-season, and Judith Ross was hired in her place.

Interpretive Programs

In addition to Fiery Furnace walks, other interpretive programs presented in 2004 included:

- evening programs for 9,473 visitors;
- guided walks with 4,212 visitors; and
- visitors contacted on roving interpretation.

“Porch talks” continued during the season this year outside the visitor center from mid- to late morning. Rangers set up a table with a variety of visual aids and props, and contacted over 2400 visitors as they entered or left the building. These were offered from March into June, when the move to the temporary facility necessitated ceasing of this program (no porch, no shade, no good location in which to offer).

The eight-minute orientation video continued to air locally on a closed-circuit system to twelve major hotels in Moab, reaching over 500,000 visitors with park specific information; funding was provided through CNHA aid.

Volunteers

The Student Conservation Association continued to provide excellent Resource Assistants for our volunteer program; four volunteers, each working twenty-week sessions, provided us with useful, skilled and experienced additions to our staff. Two other full-time interpretive volunteers worked various lengths of time, with four matching the SCAs time. Fourteen volunteers provided 5,275 hours of service in a variety of interpretive duties. The park’s total volunteer commitment, including interpretive, resource management and campground host duties, totaled 10,124 hours.

Shoemaker coordinated annual Sierra Club work group in April; they completed over 600 hours of time working on a variety of projects, including a trail closure and cutting, hauling and piling tamarisk to block unwanted social trails, painting vault toilets, replacing some boundary fencing, and doing a variety of trail work. Shoemaker and Budelier also coordinated and/or led several other volunteer projects throughout the year.

Planning

The entire Interpretation division staff worked diligently on the new visitor center exhibit planning throughout the year. EDX Designs of Seattle completed the exhibit design in June. In September, Diane Allen traveled to Harpers Ferry, WV along with COTR Cindy Nielsen to review the submitted bids for exhibit fabrication. Southern Customs Exhibits, Inc. of Anniston, AL was chosen. Subcontractors include Somerset Group, also of Alabama, for the interactive and audiovisual work; Matthew Gray Palmer of Washington was chosen to prepare the wildlife bronze sculptures in the visitor center plaza; and Chase Studios, who will prepare the relief map, plant and animal models. Several preliminary exhibit packages were submitted to the park for comments near the end of the year, and work will continue in 2005. Much of the interpretive staff continued work on exhibits in the new visitor center, reviewing design plans as well as continuing to locate photographs and other graphics. Allen also participated in planning workshops for the Alternative Transportation Plan and the visitor center building itself.

GPRA Surveys

The interpretive staff distributed 400 visitor surveys as part of the GPRA process in April, at various locations throughout the park. Results of the 27% response rate showed that 95% of our visitors were

satisfied with the park's services, facilities and recreational opportunities, same as the previous year; 95% correctly identified one or more of the significance statements for the park. Assistance from park employees was rated at 93% satisfaction, visitor center at 91%, exhibits at 88%, ranger programs at 91%, park map at 97%, and opportunities to learn about nature, history or culture at 85%. The survey in 2004 was conducted in April, the same month as in 1999-2003.

Cooperating Association Activities

Chief of Interpretation Diane Allen continued in her role as the Canyonlands Natural History Association (CNHA) liaison for the NPS. In this capacity, she attended Board meetings, as well as committee meetings for Publications and Finance.

CNHA continued to be successful, with revenue for calendar year 2004 at over \$1,808,000 for the entire association; 40% of that was brought in at Arches. A number of new titles and products, as well as improved sales area management, contributed to this success. Popular new sales items included Arches (and Canyonlands) Flash Cards, CNHA logo water bottles, T-shirts, and several new postcards.

Aid returned to Arches National Park specifically totaled over \$51,000; in addition, \$23,500 was granted to the Southeast Utah Group interpretive efforts and \$19,875 to SEUG Resource Management activities, some of which benefited Arches. Additional assistance was provided in the form of sales clerks in the visitor center, who also assisted visitors with trip planning and general orientation.

Activities/Community Relations

Ferguson continued monitoring *Lomatium* study plots in the Fiery Furnace. Lafever compiled a variety of data pertaining to wildflower blooming times and weather data, in preparation for posting it on the park's web site. Sharon Brussell continued to serve as Treasurer and all-around volunteer for the Humane Society of Moab Valley. Diane Allen served as volunteer for the Humane Society working on the proposed Animal Shelter. Murray Shoemaker served as president of his Homeowner's Association. Steve Budelier served as a volunteer computer consultant for the Humane Society, Canyonlands Community Recycling Center, and the Moab Music Festival; he also served as a volunteer for the Canyonlands Half Marathon.

Law Enforcement, Resource Protection and Special Park Uses

Law Enforcement

- A Utah Highway Patrolman collapsed on a hike to Delicate Arch. Ranger responded as well as St. Mary's Care Flight. CPR was in progress when rangers and St Mary's Care Flight arrived. Care Flight medical personnel determined that the victim had expired. Care Flight transported the remains to Allen Memorial Hospital. The victim was in Moab on a Highway patrol training session.
- A nearly twenty-four hours search was completed to find a missing visitor on the Broken Arch trail. The visitor had become separated from the hiking party and was later found approximately five miles from the point last seen. Grand County Search and Rescue, Mesa Verde Helicopter, Utah Highway Patrol helicopter, a Civil Air Patrol fixed wing aircraft and a search and rescue dog assisted NPS rangers in the search.
- A Motor Vehicle accident occurred at Moab Fault that left one vehicle burning at the pull-off and a second vehicle over the embankment. Further investigation of the incident revealed that a domestic dispute had started the incident. The driver of the vehicle that was burning hit and killed his girlfriend at the Moab Fault with his vehicle and also struck a second vehicle which ended up

over an embankment. Only minor injuries occurred to the four other people involved. The driver of the vehicle was charged with murder, DUI, two counts of aggravated assault, two counts assault domestic violence, open container, speeding and improper usage of lanes. The defendant is to stand trial in Moab in May 2005. Grand County Sheriff's deputies, Utah Highway Patrol personnel, Grand County Ambulance and rangers responded to the incident. The major investigation was completed by Grand County Sheriff's detectives.

- Six Type One offences occurred. These were mostly Lacey/Theft from motor vehicles and one Homicide. Six Part Two offences occurred. These cases ranged from vandalism, commercial filming without a permit, drug possession and business operation without a permit.
- Fifty citations and five written warnings were issued, mostly for speeding and resource issues.
- Eighteen motor vehicle accidents were investigated one ending in a fatality.
- Fifty-four traffic incidents and twenty three natural resource violations were investigated.
- Thirty five vehicle assists mostly lock outs and jump-start of vehicles.

Search and Rescue

For the fiscal year of 2004, there were thirty search and rescue (SAR) incidents. Five incidents were "major" (unprogrammed cost over \$500). The major search for Ms. Gilbert near the Broken Arch Trail was a significant event for Arches National Park. The search lasted nearly twenty-four hours, well over a dozen individuals assisted with the search. Ms. Gilbert was found by the SAR personnel and was relatively unharmed. The majority of the SAR incidents in fiscal year 2004 were carry-outs of injured visitors on trails or in backcountry areas. However, four SAR incidents were classified as "technical," requiring significant use of ropes and rigging techniques.

Emergency Medical

Twenty-seven emergency medical incidents were reported and documented. A total of twenty-six patients were treated. One patient refused treatment and left the park. Twenty-three patients required significant basic life support. Two fatalities occurred in the park; one due to cardiac arrest and the other is currently being investigated as a homicide. Twenty calls were traumatic in nature; six were medical in nature—primarily heat-related illnesses; one was related to cardiac arrest. Seven ambulance, one air transport and sixteen personal vehicle transports occurred. The park had eighteen EMS providers, including five Emergency Medical Technicians, one First Responder and twelve Basic First Aid Personnel.

Resource Management

There was a deployment of fourteen NPS Exotic Plant Management Teams (EPMT) from across the country in Courthouse Wash to remove Tamarisk and Russian Olive. This was the first ever large scale deployment of the teams. The teams worked for six days and cut and treated over a mile of Tamarisk and Russian olive from the courthouse wash bridge upstream. The project was a great success and the teams accomplished more than they expected. (Salamacha, Webster)

- The Devils Garden breeding bird survey was completed for the 22nd consecutive year monitoring for abundance and territories in Pinion Juniper woodlands. (Salamacha)
- The Arches roadside breeding bird survey was completed for the 16th consecutive year monitoring for abundance of species in various habitat park wide. (Salamacha)

- Seventy-two raptor nests containing eight species of birds of prey were surveyed for fledgling success. This was the 22nd consecutive year. (Salamacha)
- A great blue heron rookery along the Colorado River border of arches was monitored for fledgling success. This was the 7th consecutive year the site has been monitored. (Salamacha)
- Long term monitoring of riparian vegetation was continued in the Lost Spring Canyon area as well as a breeding bird survey for abundance of species. (Salamacha)
- More fencing repair work was completed by the Sierra Club on the Cache Valley and Salt Valley fences. (Salamacha)

Critical Incident Stress Management

- Provided Peer Counseling to Arches employees after homicide within Arches National Park
- Provided Peer Counseling to Bureau of Land Management employees after a fatality
- Provided Peer Counseling to Canyonlands NP employees after a fatality

Visitor Experience and Resource Protection

RMVP staff conducted 2,100 VERP monitoring surveys, 700 each at the Windows, Delicate Arch and Devil's Garden (pedestrian section only). A total of 340 monitoring surveys were conducted in the motorized rural zone (Salt Valley Road) and 63 were conducted in the semi-primitive motorized zone (four-wheel drive road). (McKinlay-Jones and Bartels)

Special Park Uses

It was a busy year for Special Park Uses. There were 22 film permits issued for Arches, Canyonlands, Natural Bridges and Hovenweep. The majority of the projects took place at Arches and the Island in The Sky District of Canyonlands. The projects varied in scope from small, still photography productions with minimal crews, to large-scale advertisement and movie productions. The movies were "Don't Come Knocking" with Sam Shepard and "All the Days Before Tomorrow." There were 10 Film Permit Waivers issued for projects that fit the requirements for such an exemption. At Arches National Park there were 20 Special Use Permits issued. Most of the permits were issued for weddings. Permits were also issued for a charity bike ride, the annual Easter Sunrise Service

Special Events

The Lance Amstrong Foundation Charity Bike Ride to fight cancer was issued again. Local outfitter Griffith Expeditions, specifically Mark Griffith and Jose Tejada, in conjunction with park personnel, organized the event. The permit authorized 350 participants, the event was not a competition and all went smoothly.

Planning

Webster and McKinlay-Jones were members of the planning team for the Alternative Transportation Planning project. Webster, McKinlay-Jones and Salamacha continued involvement in the planning for the new Arches Visitor Center.

Activities/Community Relations

Homeland Security Assignment at Mount Rushmore (Salamacha). Chief Ranger Webster participated in the following community activities: Grand County Domestic Violence Coalition (member); Grand County Parents for Public Schools (director & member); Grand County High School Community Coalition (director & member); Moab Recreation Department youth coach (soccer & basketball); Grand

County Search and Rescue. Staff participated in the following community activities: Moab Recreation Department (soccer& baseball) (McKinlay –Jones); Volunteer Grand County Elementary (McKinlay-Jones); Moab Recreation Department Adult softball and volleyball (McKinlay-Jones); San Juan County Critical Incident Stress Debriefing (McKinlay-Jones); Moab Recreation Department youth coach (soccer) (Corson); Volunteer Grand County Elementary (Corson)

Division of Facility Management

Planning:

Maintenance personnel participated in the planning and review process for the new visitor center and Alternative Transportation plan. Bryant served on the technical evaluation panel for the new Visitor Center prospective contractors.

Personnel:

Recruitment and hiring was completed for three Seasonal WG-07 Maintenance Worker project-funded positions, one Maintenance Worker Leader (Trails) position, six Maintenance Worker (Trails) positions, and five Laborer positions.

Safety:

The Facility Management Division conducted regular weekly safety meetings and continued to develop and implement Job Hazard Analyses for work activities. Employee injuries were limited to minor cuts and abrasions.

FMSS:

Arches continued the implementation of the Facility Management Software system in 2004. Shawn Bryant completed FMSS update training. The division performed Annual Condition Assessments on 48 assets and Comprehensive Condition Assessments on 30 assets. Asset Specification Templates and Equipment/Feature records were completed for 47 assets. All FY 04 FMSS requirements and deadlines were accomplished. The Division also developed facility maintenance and facility operations work orders and all maintenance activities are being tracked using the FMSS system.

Operations:

Performed routine operations activities including:

- Routine custodial duties at Visitor Center, Library, Rock House, 16 Vault toilets, and Campground comfort stations
- Routine water sampling
- Solid waste disposal
- Roadside litter pickup
- Routine campsite maintenance
- Mowing, trimming and irrigating grounds.
- Charging vault toilets
- Pest control and rodent-proofing
- Tree trimming
- Routine housing inspections

Maintenance/Projects

In FY 2004 the Facility Management Division received and managed approximately \$ 528,000 in project and other soft-money funding from various sources including Cyclic, Fee Demonstration, Equipment Replacement, and Regional Micro-Grants.

- The Delicate Arch Trail Rehabilitation project was completed in FY04. The following work was accomplished: Constructed 335 LF of raised causeway; rebuilt 568 SF of multi-course retaining wall; reconstructed approximately 398 SF of stone culvert headwall; installed 37 stone waterbars; installed 6 step-down drains; removed 7 inoperative culverts; performed trail tread maintenance (narrowing, outsloping, berm removal, leveling) on 2,170 LF of trail; performed rehab/reveg work on entire project corridor (3600 LF). Project was completed according to scope of work developed 12/12/2002. This project was completed using Arches' first in-house trail crew consisting of ten seasonal employees.
- A 10-member SCA crew completed deferred maintenance on approximately 7 miles of park trails. This project accomplished cyclic maintenance including: Cleaning, repairing, and replacing waterbars; replacement of eroded trail tread; cleaning culverts and drainage structures; clearing and brushing; rebuilding rock retaining walls; and obliteration of social trails. Work was performed on portions of the Windows Loop, Skyline Arch, Landscape Arch, Delicate Arch Viewpoint, Delicate Arch, and Devil's Garden trails.
- Purchased and installed 54 new picnic tables, 56 new fire rings, and 28 new upright grills in the Devils Garden Campground and Picnic Areas.
- The exterior of the Maintenance Shop was prepped and painted, and deteriorated soffit, fascia, and trim were replaced.
- The 50,000 gallon water storage tank at park headquarters was sandblasted and painted and two 6-inch valves in the water main were replaced. This project was completed by a contract with EPC Corporation, and 8A contractor from Arizona.
- Constructed 278 LF of flood diversion walls in the Devils Garden Campground. Walls were constructed with footings, CMU core, and natural stone veneer.
- Completed striping of all park roads through a contract with EPC Corporation.
- Maintenance employees assisted with the moving of offices and Visitor center operations from the old Visitor Center to the temporary offices and facilities.
- Water system solution pumps were repaired and rebuilt.
- Completed 439 written work requests from various divisions and residents.
- Repaired, cleaned, and serviced furnaces, evaporative coolers, and A/C units.
- Painted park signs, pavement symbols, and vault toilet interiors.
- Replaced miscellaneous water valves throughout park.
- Installed vacuum breakers throughout the park.
- Sealed fences, roof shakes, and signs.
- Repaired lawn sprinkler system.
- Removed weeds from drainfields, trails and around buildings.
- Built new roadway and backcountry trail signs, and painted all routed signs.
- Replaced several kitchen and bathroom faucets.
- Replaced several window curtains in park buildings with blinds.
- Replaced cork in exhibit information signs.
- Repaired or replaced a number of door locks on park buildings.
- Repaired several sewer lines.
- Cleaned carpet in Visitor Center, Rock House, and seasonal housing.
- Serviced and repaired Devil's Garden Generators.
- Repaired several flood-damaged areas in park.
- Removed rockfalls from park road.
- Serviced and repaired water-system chlorinators and pumps.
- Replaced bearings and shock absorbers on Devil's Garden solar panels.
- Reset several sign posts on park roads and trails.
- Repaired park fences.

- Repaired building windows and latches.
- Replaced all furnace filters.
- Tested all GFI breakers.
- Repaired leaks in Maintenance Building roof.
- Serviced Interior vehicles.

Research/Resource Management

Cultural Resources

- The archeological monitoring program, long dormant, was revitalized at Arches. Ten sites were monitored during FY04.
- Staff completed the removal and re-installation of mortar on the cabin and dugout at the Wolfe Ranch National Historic District. In addition, a pest control contractor treated the wood in both structures for termites.
- Preliminary data was collected on 6 LCS structures in anticipation of updating the LCS in 2005. Complete documentation and condition assessments will be performed on all 10 LCS structures.

Curation

- Rehoused archeological materials from Arches for more efficient use of storage space.
- Assisted ARCH staff with the change in Visitor Center exhibits, storing objects used in old exhibits, and supporting development of new exhibits.

Historic Photo Project

- Historic photos of the parks of the SEUG were collected at various regional museums and depositories. Many photos were scanned into digital format.
- The Canyonlands Natural History Association purchase needed photo equipment to continue this project. Many sites will be re-photographed in 2005.
- Hired a contract technician to scan photos and help set up a comprehensive database.
- Contracted with an historian to search major archives.

Monitoring Projects

- All 16 long-term vegetation-monitoring plots throughout the SEUG were visited and data collected.
- All matching photos have been organized into sets for easy analysis.
- All data has been organized and prepared for analysis.
- All vegetation data from 1987-2004 has been organized, standardized, summarized, and placed in one MS ACCESS file.
- All data from 1988-2004 was organized into one mega-ACCESS file and sent to USGS ecologists for more extensive statistical analysis.

Water Quality Monitoring

- The water quantity project in Arches National Park was continued for the 4th year in a row with some funding from the NPS Water Rights Division in order to assist ARCH and WRD with field data necessary to write a Groundwater Protection Plan.
- Beginning in July, 7 sites in Arches National Park were monitored monthly. All samples were sent to the Utah Department of Health in Salt Lake City for a complete chemical analysis.
- Bacteria samples were taken and analyzed at most of the sites.
- Macro-invertebrates were collected at all water sites 4 times a year.

Riparian Bird Monitoring

- Avian point count surveys were performed at three survey sites in ARCH for the ninth year in a row.
- The 2004 report “Avian Population Monitoring in Riparian Habitats within National Parks of the Southeast Utah Group” is complete. Copies will be sent to the various parks and to the Utah Division of Wildlife Resources.

Riparian Vegetation Monitoring

- All Lost Spring Canyon (ARCH) Riparian Transects were re-read in 2004 for the second time since 2000.
- All photo points were re-photographed in 2004.
- A new Lost Spring Canyon Monitoring Report will be completed in 2005.

Bighorn Sheep Monitoring

The Arches bighorn sheep herds were extensively monitored throughout 2004. With the ongoing drought, lamb survival has been only marginal this winter with an overall lamb: ewe ratio of 40:100, compared to last winter's 62:100. The herds are in overall good health, and after the decline of the past few years, the population hopefully is on the rebound again. Funding is being sought to put out more radio collars, perhaps GPS collars, to supplement monitoring efforts.

Sound Monitoring

Sound monitoring continued at a couple of sites in Arches National Park despite the loss of funding.

Fire Effects Monitoring

- Fire effects monitoring in Arches was performed for the fifth year.
- Photos were re-taken at all plots.

Species Lists

All species lists for the parks of the SEUG were updated and distributed throughout the parks.

Exotic Plant Control-

Work was done with Exotic Plant Management Teams, Sierra Club Service Group, wilderness volunteers, other volunteers, youth groups and the Utah Conservation Crew. The major exotic plant project was tamarisk control in Arches National Park's Courthouse Wash. Other time was spent on smaller projects and re-treatments of past control efforts. Acreages were calculated by GPS. Approximately 110 acres were treated involving 2,200 man hours. Exotic species controlled included Tamarisk, Russian Knapweed, Diffuse Knapweed, Field Bindweed, Purple Loosestrife, Ailanthus, and Siberian Elm.

Arches Biscuitroot (*Lomatium latilobum*) Monitoring.

- Re-designed the Arches National Park biscuitroot monitoring program.
- Collected data at all the major population sites for the second year in Arches.
- Organized all photos and started a database.
- A 2003 Monitoring report was completed in 2004.
- A final report will be ready in early 2005

Weather

Weather data was taken from ARCH and entered into an EXCEL spreadsheet. This information will be used in future analysis for weather related differences in vegetation cover etc.

Night Sky

Sites in CANY and ARCH were monitored and preliminary results were produced.

Vegetation Sampling of Bird Transect Stations

- - Collected vegetation data for all riparian bird transects in CANY, ARCH, and NABR.
- Input all data into MS Excel database.

Compliance/Environmental Quality:

Atlas tailings pile EIS: The Department of Energy is developing an EIS on remediation of this abandoned uranium mill and tailings pile. NPS and SEUG staff have been involved for over ten years in the issue of how to remediate this site, on the banks of the Colorado River, across the highway from Arches. In recent years NPS has been a cooperating agency with the DOE in the development of the EIS. SEUG/RM (planner) involvement this year:

Advised Department of Energy on NPS concerns

- Coordinated review and comments on the DOE's preliminary (pre-public) EIS, then on the draft EIS released to the public, with NPS Water Resources Division, Glen Canyon, and Colorado River Coordinator's office
- Coordinated NPS tasks in accordance with cooperating agency agreement:
 - Visual impact and viewshed analysis
 - Park visitation statistics
 - Sensitive noise and vibration receptors
 - Traffic impacts
 - Review of class I cultural resources report
 - Reviewed and commented on interim remediation plan
- Coordinated involvement of NPS Water Resources Division
- Participated in cooperating agency meetings
- Prepared briefing statement for regional director

Fire Management Plan:

An interdisciplinary team representing staff from SEUG divisions and parks and our Mesa Verde Fire Management Officer made substantial progress on a new Fire Management Plan for the group. Drafts of most parts of the draft plan have been completed and are being compiled and edited.

Other planning activities included

- Assist/advise consultants and park staff with Arches transportation plan
- Coordinated environmental compliance and documentation for approximately 20 proposed administrative projects and activities

Research

1) Permit ID: ARCH-2004-SCI-0001 Study ID: ARCH-00013 Application Id: 18275

Study Title: The Moab Site Environmental Air Monitoring Program - Conducted by the U.S. Department of Energy's Grand Junction Office. Investigator: Joel Berwick

2) Permit ID: ARCH-2004-SCI-0002 Study ID: ARCH-00011 Application Id: 18058

Study Title: Biology and Distribution of the Butterflies of Arches and Canyonlands National Parks. Investigator: Clyde Gillette

3) Permit ID: ARCH-2004-SCI-0003 Study ID: ARCH-00017 Application Id: 18052

Study Title: BCS PROJECT / Barrier Canyon Style Rock Art Documentation. Investigator: David Sucec

- 4) Permit ID: ARCH-2004-SCI-0004 Study ID: ARCH-00012 Application Id: 18350
Study Title: Acoustic Monitoring in Arches National Park, 2004. Investigator: Skip Ambrose
- 5) Permit ID: ARCH-2004-SCI-0005 Study ID: ARCH-00008 Application Id: 18360
Study Title: Carbon and Nitrogen Cycles in Arid Lands: The Role of Biological Soil Crusts as Influenced by Soil Surface Disturbance, Climate Change and Annual Grass Invasion. Investigator: Jayne Belnap
- 6) Permit ID: ARCH-2004-SCI-0006 Study ID: ARCH-00002 Application Id: 18422
Study Title: Annual Forest Land Inventory of Utah. Investigator: Michael J. Wilson
- 7) Permit ID: ARCH-2004-SCI-0007 Study ID: ARCH-00016 Application Id: 18685
Study Title: Vegetation Data Collection in Support of the U.S. Geological Survey - National Park Service Vegetation Classification and Mapping Program at Arches National Park
Investigator: James Von Loh
- 8) Permit ID: ARCH-2004-SCI-0009 Study ID: ARCH-00009 Application Id: 18804
Study Title: A study of the distribution of *Catocala benjamini* and related *Catocala* in northeastern Arizona and southeastern Utah. Investigator: John Peacock
- 9) Permit ID: ARCH-2004-SCI-0010 Study ID: ARCH-00027 Application Id: 19735
Study Title: Deformation of porous sandstone. Investigator: Jonny Hesthammer
- 10) Permit ID: ARCH-2004-SCI-0011 Study ID: ARCH-00026 Application Id: 20857
Study Title: Factors influencing distribution & mortality of a dominant riparian tree
Investigator: Alicyn Gitlin
- 11) Permit ID: ARCH-2004-SCI-0012 Study ID: ARCH-00028 Application Id: 21068
Study Title: Spatial arrangement of deformation bands in the Moab Member of the Entrada Sandstone.
Investigator: Randall Marrett
- 12) Permit ID: ARCH-2004-SCI-0013 Study ID: ARCH-00029 Application Id: 20772
Study Title: Recording Barrier Canyon Style Rock Art. Investigator: Michael Firnhaber
- 13) Permit ID: ARCH-2004-SCI-0014 Study ID: ARCH-00030 Application Id: 21423
Study Title: Using Biotechnology to Restore Riparian Habitats in the West: Genetic and Genomic Studies of Biodiversity and Drought Tolerance. Investigator: Gery Allan